

CLAIMS

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A shrouded nozzle arrangement for a gas turbine ⁸engine exhaust ⁹comprising ¹⁰an exhaust ¹¹nozzle, a ¹²duct means for providing communication of (exhaust gas) between the gas turbine and (exhaust nozzle), and a ¹³shroud which encloses the nozzle and duct means, the shroud having an ¹⁴exit aperture through which, in use, the exhaust nozzle discharges, (characterised in that) the exhaust nozzle is translatable from a ¹⁵first position, wherein (the exit plane) of the nozzle lies upstream of the exit aperture of the shroud, to a ¹⁶second position, wherein (the exit plane of the exhaust duct) lies substantially downstream of the exit aperture of the shroud. ¹⁷

2

A shrouded nozzle arrangement as claimed in claim 1 wherein the duct means comprises an ¹⁸inner duct ¹⁹member and an ²⁰outer duct ²¹member concentric with one another, wherein the inner and outer duct members are slideably mounted and movable relative to one another, the outer duct member at all times overlapping the inner duct member such that inner and outer duct members provide continuous duct means.

3

A shrouded nozzle arrangement as claimed in claim 2 wherein a substantially ²²annular support ²³means is provided, the support means remaining fixed relative to one of the duct members, the other duct member being slideably mounted within the support means and moving relative to the support means.

4

A shrouded nozzle arrangement as claimed in claim 3 wherein the support means is provided with an ²⁴inwardly projecting ²⁵first flange, the first flange slideably engaging the slideable duct member about an annular periphery to provide a substantially gas tight seal, the slideable duct member provided with an ²⁶outwardly projecting ²⁷second flange, the second flange slideably engaging the support means about an annular periphery to provide a substantially gas tight

seal, the first and second flanges defining a chamber between support means and slideable duct member into which exhaust gas may be bled from within the duct means, the first and second flanges being disposed such that pressure within the chamber acts upon the slideable duct member to counter the loads imposed by exhaust gas impinging upon the exit nozzle.

- 5 A shrouded nozzle arrangement as claimed in claim 1 wherein a reheat system is provided within the duct means.
- 6 A shrouded nozzle arrangement as claimed in claim 2 wherein a reheat system is provided within the duct means.
- 7 A shrouded nozzle arrangement as claimed in claim 3 wherein a reheat system is provided within the duct means.
- 8 A shrouded nozzle arrangement as claimed in claim 4 wherein a reheat system is provided within the duct means.
- 9 A shrouded nozzle arrangement as claimed in claim 1 wherein the nozzle is capable of thrust vectoring.
- 10 A shrouded nozzle arrangement as claimed in claim 2 wherein the nozzle is capable of thrust vectoring.
- 11 A shrouded nozzle arrangement as claimed in claim 3 wherein the nozzle is capable of thrust vectoring.
- 12 A shrouded nozzle arrangement as claimed in claim 4 wherein the nozzle is capable of thrust vectoring.

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- 13 A shrouded nozzle arrangement as claimed in claim 1 wherein the shroud is configured to minimise the radar and infra-red signatures of the nozzle and exhaust gas issuing from the nozzle.
- 14 A shrouded nozzle arrangement as claimed in claim 2 wherein the shroud is configured to minimise the radar and infra-red signatures of the nozzle and exhaust gas issuing from the nozzle.
- 15 A shrouded nozzle arrangement as claimed in claim 3 wherein the shroud is configured to minimise the radar and infra-red signatures of the nozzle and exhaust gas issuing from the nozzle.
- 16 A shrouded nozzle arrangement as claimed in claim 4 wherein the shroud is configured to minimise the radar and infra-red signatures of the nozzle and exhaust gas issuing from the nozzle.

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B1

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